

#### ABSTRACT OF THE DISCLOSURE

A method of automatically focusing a microscope in which a beam of light is directed from a light source through an objective of the microscope system to an object  
5 whereby light is reflected from the surface thereof; reflected light is collected and directed to an imaging system. The incident beam of light is limited in spatial extent by imaging an aperture to form an illumination pupil, the centroid of illumination of the illumination pupil is aligned with the incident optical axis of the instrument. The reflected light is split in the imaging system into at least one pair of images from  
10 eccentric sections of an imaging pupil displaced from the optical axis in opposite directions. The separation of the images thereby produced is determined to provide an indication of the object distance. A focusing system implementing the method and a microscope fitted with such a system are also described.